







## Cam Followers

Unmounted bearing assembly consisting of hardened precision ground inner and outer raceways with either full complement or separated (cage) needle, ball, tapered or cylindrical rolling elements constructed with an integral stud or precision ground bore. Cam follower bearings provide an antifriction solution for translating rotation to linear motion or supporting either pure radial or combination thrust loads depending on the rolling elements types.

### **Bearing Configurations**

Cylindrical, Crowned, V-Groove Or Flanged

### **Mounting Styles**

Eccentric Or Concentric Stud Or Yoke

### Outer Roller Diameter Range

1/2" To 10" And 13 mm To 90 mm

#### **Materials**

Bearing Quality Steel, Stainless



## Cam Follower Selection Guide

				Size Range		
		Product Series	Material / Finish	Inch	Metric	
		CF		1/2 - 10		
		CYR		3/4 - 10		
		CFH		1/2 - 7		
		BCF		1/2 - 4		
CAMROL		BCYR	Black Oxide Finish Bearing Steel	3/4 - 4		
		MCF			16 - 90	
	6	MCFR			13 - 90	
		MCYR			5 - 50	
		MCYRR			5 - 50	
	0	CFD		1 1/4 - 6		
Heavy-Duty		CYRD	Black Oxide Finish	1 1/4 - 6		
- Heavy-Duty		MCFD	Bearing Steel		35 - 80	
		MCYRD			15 - 50	

McGill CAMROL Cam Followers are available in 400 series stainless steel components for improved resistance to both external and internal corrosion.

CRES CAMROL bearings are dimensionally interchangeable with standard CAMROL® bearings and easily identifiable with "CR" designation.



 $<sup>^* \</sup> For \ estimating \ purpose \ only, individually \ sizes \ may \ vary \ and \ are \ subject \ to \ change \ without \ notification$ 

	Design Characteristics Features											
Radial Load	Thrust Load	Precision	High Speed	Relative Base Cost *	Crowned OD	Eccentric Stud	Lubrication Holes	Seal	Hex Hole	Slotted Face	Jam Nuts	Page No.
	0	•	<u></u>	\$	0	0	S	0	0	S	-	B-15
•	0	•	<u></u>	\$	0	-	S	0	-	-	-	B-39
•	0	•	<u></u>	\$\$	0	-	S	0	0	S	-	B-15
0	0	•	0	\$	0	0	S	0	0	S	-	B-45
0	0	•	<u></u>	\$	0	-	S	0	-	-	-	B-57
	0	•	<u></u>	\$	S	0	S	0	0	S	S	B-69
•	0	•	<b>-</b>	\$	S	0	S	0	0	S	S	B-69
	0	•	<u></u>	\$	S	-	S	0	0	-	S	B-91
	0	•	<b>—</b>	\$	S	-	S	0	-	-	S	B-91
	0	•	<u></u>	\$\$	0	0	0	S	S	1	-	B-103
	0	•	<u></u>	\$\$	0	-	0	S	-	1	-	B-107
	0	•	<u></u>	\$\$	S	0	S	-	0	S	S	B-111
	0	•	<u></u>	\$\$	S	-	S	-	-	-	-	B-115
	Circular Track / Misalignment Load Sharing / Adjustment To Track Relubrication To Help Promote Bearing Operating Life Contamination Barrier Blind Hole Mounting Allows The Use Of A Lube Fitting When Lubrication From The Flange Side Of Bearing Accessories Included											

O = Optional
S = Standard
○ = Not Recommended
○ ○ ○ ○ ● ●
Poor ◆ Best



## Cam Follower Selection Guide

				Size	Range
		Product Series	Material / Finish	Inch	Metric
Special Duty	6	SDCF	Black Oxide Finish	1 - 4	
Special Duty		SDMCF	Bearing Steel		25 - 100
		PCF		1 1/2 - 9	
		PCYR		3 - 6	
TRAKROL	600	FCF	Black Oxide Finish	1 1/2 - 9	
TRAKROL		FCYR	Bearing Steel	3 - 6	
	0	VCF		2 1/2 - 8 1/2	
		VCYR		3 1/2 - 7 1/2	



	Design (	CHARACT	ERISTIC	S		,	F	EATURES	6			
Radial Load	Thrust Load	Precision	High Speed	Relative Base Cost *	Crowned OD	Eccentric Stud	Lubrication Hole	Seal	Hex Hole	Slotted Face	Jam Nuts	Page No.
•	0	•	<b>-</b>	\$\$\$	0	0	-	S	S	-	S	B-123
<b>—</b>	0	•	<b>-</b>	\$\$\$	0	0	-	S	S	-	S	B-125
•	•	•	•	\$\$	0	0	-	S	-	1	0	B-131
<u> </u>	•	<u> </u>	•	\$\$	0	-	-	S	S	-	-	B-133
<u> </u>	•	•	•	\$\$\$	-	0	-	S	S	1	0	B-135
<u> </u>	<u>-</u>	<u> </u>	•	\$\$	-	-	-	S	-	-	-	B-137
<u> </u>	•	<u> </u>	•	\$\$	-	0	-	S	S	-	0	B-139
<u></u>	<u>-</u>	<u> </u>	<del>-</del>	\$\$	-	-	-	S	-	-	-	B-141
	Circular Track / Misalignment Load Sharing / Adjustment To Track Relubrication And Promote Bearing Life Contamination Barrier Blind Hole Mounting Allows The Use Of A Lube Fitting When Lubrication From The Flange Side Of Bearing Accessories Included											

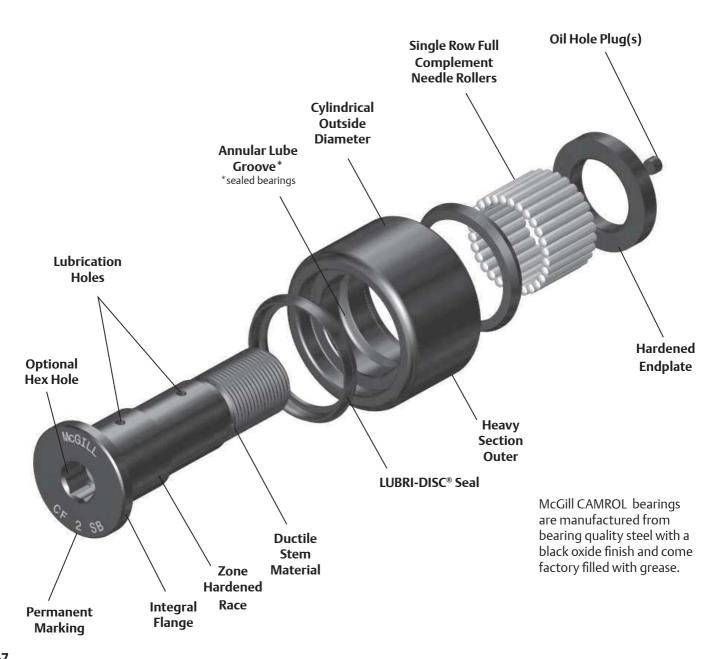
O = Optional
S = Standard
○ = Not Recommended
○ ○ ○ ○ ○ ●
Poor ◆ Best

 $<sup>^{*}</sup>$  For estimating purpose only, individual costs may vary and are subject to change without notification

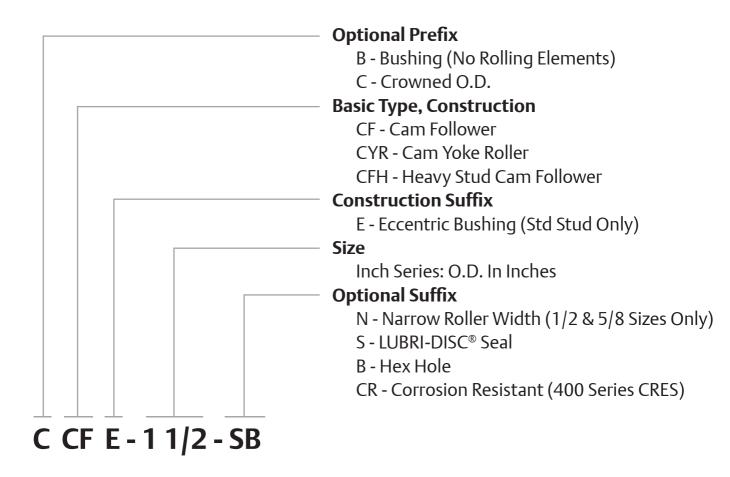


### **McGill Inch Cam Followers**

McGill CAMROL bearings are full complement needle bearings feature black oxide treated bearing steel, available in two basic mounting styles for use in mechanical automation or linear motion applications. Our basic features each contribute to improved performance, while the LUBRI-DISC® seal option helps prevent metal to metal contact within the bearing while providing a barrier for contaminant entry and allow venting of excess or old grease during relubrication. In addition to the seal option these bearings are available with several dimensional choices and combinations to provide a specific solution for the application. Within the following section you can learn more about these features and how they can be applied to your application.



### **Cam Follower Inch Nomenclature**





## **M<sup>c</sup>GILL**® Inch Cam Follower Bearings

### **Features and Benefits**



### **Single Row Full Complement Needle Rollers**

The needle roller diameter, length, and number have been optimized to provide a high dynamic and static load rating, contained within industry standard bearing envelope dimensions.



### **Heavy Section Outer**

The heavy section outer helps support radial loading and provide proper rolling element support.



### Cylindrical Outside Diameter (OD)

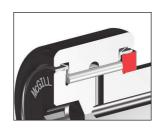
The cylindrical OD can improve performance in certain applications such as improved track capacity by maximizing the contact area with the track.



### **Zone Hardened Raceways**

Heat treatment used to precisely harden working surfaces of the raceway and flange. The hardened surfaces provide support for the rolling element contact stresses, while keeping the core of the inner ductile to help absorb shock loads.

### **Features and Benefits continued**



### **Hardened Endplate**

Similar to the flange, the endplate must provide a seal surface for the LUBRI-DISC seal and resist wear from incidental contact with the outer or rollers. The hardened and ground endplate provides a sealing surface with LUBRI-DISC® seal option.

### Factory Grease Fill

The cam follower and cam yoke roller bearings are factory lubricated with a medium temperature grease. Contact Application Engineering when application conditions require special lubricants.



#### **Lubrication Holes**

Depending on mounting option, McGill stud type CAMROL bearings may include a lubrication hole to accept a standard drive fitting or an included oil hole plug. The oil hole plug is recommended for closing unused holes to help protect against bearing contamination or lubrication loss.



### Yoke Roller Lubrication Hole with Annular groove

McGill CAMROL Yoke roller bearings include a lubrication hole to provide a passage for lubrication to the rolling elements from the yoke roller bore. The customer supplied shaft must provide axial lubrication path to supply bearing. An annular groove in the inner ring bore helps direct lubricant to the hole, making alignment of the shaft and the inner ring holes less critical.



### Oil Hole Plug (s)

All McGill stud type Cam followers include 1-2 (depending on # of holes) oil hole plugs to help provide proper lubrication path to the rolling elements and prevent contamination from entering the bearing through an unused oil hole.

### **Options**



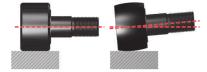
#### **Black Oxide Finish**

Bearings have a black oxide finish on all external surfaces.



#### LUBRI-DISC® Seal

The CAMROL standard for seals, the LUBRI-DISC seal helps keep contaminants out and lubrication in the bearing, with an integral back plate to separate the metal to metal contact between the outer ring and endplate(s) or flange. The back plate feature reduces friction resulting in lower operating temperatures which can extend grease life and allowing for higher operating speeds. The seal also includes vents to help prevent seal blowout during relubrication, while the outer raceway is machined with a reservoir for additional lubricant capacity. The LUBRI-DISC seal option has a good balance of sealing, lubricant capacity, and low drag operation essential to a precision cam follower suited for most industrial applications.



### **Crowned Outside Diameter (OD)**

A crown on the OD of a cam follower bearing can increase bearing life versus a standard cylindrical cam follower. The crown achieves this performance by helping to distribute the stress on the outer ring and rolling elements resulting from misalignment due to mounting inaccuracy or stud deflection. The crown also helps reduce outer skidding in turntable or rotary applications. Not all applications may see the benefit of a crowned OD, consult Application Engineering for guidance for your application.



### **Heavy Stud Diameter**

The increase stem diameter of heavy stud cam followers increases static load capacity of the bearing due to the larger stud diameter. The increase in diameter reduces the amount of deflection that can occur when cam followers are radial loaded. The resultant increase allows a maximum recommended loading of 50% BDR.

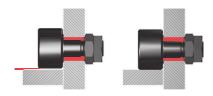
\*On Heavy-Stud Type Bearings, CFH inch series only

### **Options continued**



### **Hex Hole (Broached)**

The hex hole can aide in the installation and removal of stud type cam followers by increasing the holding power over a standard screw driver slot. The hex feature is identified with a "B" since it is produced using a broach process. Bearing relubrication from flange end must be considered for sizes under 3".



### **Eccentric Stud**

Eccentric stud option provides a means of adjusting the radial position of the bearing which can improve the load sharing of inline bearing combinations. Cam follower load sharing helps reduce operation costs by reducing premature failures due to overloaded bearings, the need of precise mounting hole location tolerances and providing ability to realign bearing due to track wear. Eccentric bushing is press fit on stud and unhardened to permit dowel or setscrew for permanent locking.



### **Bushing Type**

Non-Metallic bushing provides load support with a sliding motion that reduces the need for bearing lubrication for non-food applications where relubrication is not convenient or grease contamination in the process is not acceptable. Max allowable continuous operating temperature up to 200°F. Bushing CAMROL bearings are intended to be used in the self lubricated mode. However, continuous feed oil lubrication can be used to provide reduced wear rates. Grease lubrication should not be used.



#### Corrosion Resistance

McGill CAMROL Cam Followers are available in 400 series corrosion resistant components for improved resistance to both external and internal corrosion. CRES CAMROL bearings are dimensionally interchangeable with standard CAMROL® bearings and easily identifiable with "CR" designation. Please see page K-3 for more information and availability.



### **Additional Options**



**BHT**Hex hole at threaded end of cam follower stud.



**THT**Threaded axial lubrication hole at threaded end of cam follower stud.



**THF**Threaded axial lubrication hole at flanged end of cam follower stud. Available



THB

Threaded axial oil hole on both ends of cam follower stud. Available with all screw driver slot cam followers or broached cam followers over 3".

with all screw driver slot cam followers or broached cam followers over 3".



**ALG** 

Annular lubrication groove at cam follower stud radial lubrication hole.

## **Custom Capabilities**

- Customer specified factory grease fill
- Grease fitting installed
- Stud or thread length modifications
- Roller diameter variations or tolerances
- Cam followers grouped or matched diameter tolerance / run out sets
- Custom engineered to order designs





**Basic Construction Type:** Yoke Type Crowned / Cylindrical

Outside Diameter

**Rolling Elements:** Non-Metallic Bushing

Bearing Material: Bearing Quality Steel

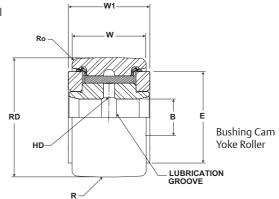
Seal Type: LUBRI-DISC®

**Lubrication:** None - Self Lubricating Bushing

**System Configuration:** Concentric / Eccentric / Heavy

Stud

Mounting Feature: Slot / Hex Hole



#### **BCYR**

Part No.		RD		W		В	W1	R	Track Roller	Track Roller	
With LUBRI-DISC	Roller	Diameter	Rolle	r Width	Bore	Diameter	Endplate Extension	Crown Prefix BCCYR-XX	Dynamic Rating	Static Rating	
Seals	ii	nch nm	ii r	nch nm		inch mm	in m	ch im	lb/N	lb/N	
	Nom.	Tol.	Nom.	Tol.	Nom	Tol	(Ref)	Radius	ID/N	ID/N	
BCYR 3/4 S	.750	+0/001	.500	+0/001	.250	+.0002/0004	.56	Cylindrical	See Load-S	peed Chart	
BCCYR 3/4 S	19.05	+0/03	12.70	+0/03	6.35	+.0005/0010	14.3	10 254	occ Load-C	spood onait	
BCYR 7/8 S	.875	+0/001	.500	+0/001	.250	+.0002/0004	.56	Cylindrical	0116	to and Object	
BCCYR 7/8 S	22.23	+0/03	12.70	+0/03	6.35	+.0005/0010	.56 14.3	10 254	See Load-S	peed Chart	
BCYR 1 S	1.000	+0/001	.625	+0/001	.313	+.0002/0004	.69	Cylindrical	Cooload	read Chart	
BCCYR 1 S	25.40	+0/03	15.88	+0/03	7.94	+.0005/0010	17.5	12 305	See Load-S	Speed Chart	
BCYR 1 1/8 S	1.125	+0/001	.625	+0/001	.313	+.0002/0004	.69	Cylindrical	Cooload	read Chart	
BCCYR 1 1/8 S	28.58	+0/03	15.88	+0/03	7.94	+.0005/0010	17.5	12 305	See Load-s	Speed Chart	
BCYR 1 1/4 S	1.250	+0/001	.750	+0/001	.375	+.0002/0004	.81	Cylindrical	Cooload		
BCCYR 1 1/4 S	31.75	+0/03	19.05	+0/03	9.53	+.0005/0010	20.6	14 356	See Load-S	peed Chart	
BCYR 1 3/8 S	1.375	+0/001	.750	+0/001	.375	+.0002/0004	.81	Cylindrical	Soo Lood S	speed Chart	
BCCYR 1 3/8 S	34.93	+0/03	19.05	+0/03	9.53	+.0005/0010	20.6	14 356	See Load-3	peed Chart	
BCYR 1 1/2 S	1.500	+0/001	.875	+0/001	.438	+.0002/0004	.94 23.8	Cylindrical	Soo Lood S	speed Chart	
BCCYR 1 1/2 S	38.10	+0/03	22.23	+0/03	11.11	+.0005/0010	23.8	20 508	See Load-3	peed Chart	
BCYR 1 5/8 S	1.625	+0/001	.875	+0/001	.438	+.0002/0004 +.0005/0010	.94 23.8	Cylindrical	Soolood	peed Chart	
BCCYR 1 5/8 S	41.28	+0/03	22.23	+0/03	11.11	+.0005/0010	23.8	20 508	Gee Lodo-S	pecu Orialt	
BCYR 1 3/4 S	1.750	+0/001	1.000	+0/001	.500	+.0002/0004	1.06	Cylindrical			
BCCYR 1 3/4 S	44.45	+0/03	25.40	+0/03	12.70	+.0005/0010	27.0	20 508	See Load-8	peed Chart	

Metric dimensions for reference only

Not all parts are available from stock. Please contact customer service for availability (800) 626-2120.

For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.



### **BCYR**

	Part No.	нс	E	Ro	PF	PFT	PF	PFT	PF	PFT		WT	
		Hole Center	Min Boss Diameter	Outer Corner		Recommended Shaft Diamete					Limiting Speed	Bearing Weight	
With	LUBRI-DISC Seals		ch	inch	Pus in	h Fit ch		e Fit		ss Fit ch			
		(Ref)	mm			mm		m Tol	Nom m	m Tol	RPM	lb kg	
BCYR	2 3/4 S		.61	.02 .4	.2495	±.0002	Nom .2495	±.0002	.2495	±.0002	See Load-Speed	.06	
ВССҮ	'R 3/4 S	.25 6.4	15.5	N/A	6.337	±.005	6.337	±.005	6.337	±.005	Chart	.03	
BCYR	BCYR 7/8 S BCCYR 7/8 S	.25	.61	.02 .4	.2495	±.0002	.2495	±.0002	.2495	±.0002	See Load-Speed	.08	
BCCY		6.4	15.5	N/A	6.337	±.005	6.337	±.005	6.337	±.005	Chart	.04	
BCYR	BCYR 1 S	.25	.78	.03 .8	.3120	±.0002	.3120	±.0002	.3120	±.0002	See Load-Speed	.15	
BCCY	'R 1 S	6.4	19.8	N/A	7.925	±.005	7.925	±.005	7.925	±.005	Chart	.07	
BCYR	CYR 1 1/8 S .2 6.	.25	.78	.03 .8	.3120	±.0002	.3120	±.0002	.3120	±.0002	See Load-Speed	.17	
BCCY		6.4	6.4	19.8	N/A	7.925	±.005	7.925	±.005	7.925	±.005	Chart	.08
BCYR	1 1/4 S	.31	.98	.03 .8	.3745	±.0002	.3745	±.0002	.3745	±.0002	See Load-Speed	.24	
ВССҮ	'R 1 1/4 S	7.9	7.9	25.0	N/A	9.512	±.005	9.512	±.005	9.512	±.005	Chart	.11
BCYR	t 1 3/8 S	.31	.98	.05 1.2	.3745	±.0002	.3745	±.0002	.3745	±.0002	See Load-Speed	.30	
BCCY	'R 1 3/8 S	7.9	25.0	N/A	9.512	±.005	9.512	±.005	9.512	±.005	Chart	.14	
BCYR	1 1/2 S	.38	1.09	.06 1.6	.4370	±.0002	.4370	±.0002	.4370	±.0002	See Load-Speed	.41	
BCCY	'R 1 1/2 S	9.5	27.8	N/A	11.100	±.005	11.100	±.005	11.100	±.005	Chart	.19	
BCYR	1 5/8 S	.38 9.5	1.09	.06 1.6	.4370	±.0002	.4370	±.0002	.4370	±.0002	See Load-Speed	.50 .23	
BCCY	'R 1 5/8 S	9.5	27.8	N/A	11.100	±.005	11.100	±.005	11.100	±.005	Chart	.23	
BCYR	R 1 3/4 S	.44	1.25	.06 1.6	.4995	±.0002	.4995	±.0002	.4995	±.0002	See Load-Speed	.64	
BCCY	'R 1 3/4 S	11.1	31.8	N/A	12.687	±.005	12.687	±.005	12.687	±.005	Chart	.29	



## **M**<sup>9</sup>GILL<sub>®</sub> Inch Cam Follower Bearings



**Basic Construction Type:** Yoke Type Crowned / Cylindrical

Outside Diameter

**Rolling Elements:** Non-Metallic Bushing

Bearing Material: Bearing Quality Steel

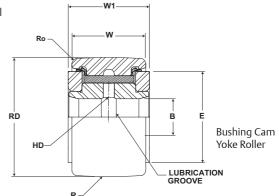
Seal Type: LUBRI-DISC®

**Lubrication:** None - Self Lubricating Bushing

**System Configuration:** Concentric / Eccentric / Heavy

Stud

Mounting Feature: Slot / Hex Hole



### **BCYR**

Part No.		RD		w		В	W1	R	Track Roller	Track Roller	
	Roller	Diameter	Rolle	r Width	Bore	Diameter	Endplate Extension	Crown Prefix	Dynamic Rating	Static Rating	
With LUBRI-DISC Seals	ir	nch nm		nch nm		inch mm		BCCYR-XX ch im			
	Nom.	Tol.	Nom.	Tol.	Nom	Tol	(Ref)	Radius	lb/N	lb/N	
BCYR 1 7/8 S	1.875	+0/001	1.000	+0/001	.500	+.0002/0004	1.06	Cylindrical	Soo Lood 6	Speed Chart	
BCCYR 1 7/8 S	47.63	+0/03	25.40	+0/03	12.70	+.0005/0010	27.0	20 508	See Load-S	Speed Chart	
BCYR 2 S	2.000	+0/001	1.250	+0/001	.625	+.0002/0004	1.31	Cylindrical	Cooload	Spaced Chart	
BCCYR 2 S	50.80	+0/03	31.75	+0/03	15.88	+.0005/0010	33.3	24 610	See Load-3	Speed Chart	
BCYR 2 1/4 S	2.250	+0/001	1.250	+0/001	.625	+.0002/0004	1.31 33.3	Cylindrical	Can Land	Charl Charl	
BCCYR 2 1/4 S	57.15	+0/03	31.75	+0/03	15.88	+.0005/0010	33.3	24 610	See Load-3	Speed Chart	
BCYR 2 1/2 S	2.500	+0/001	1.500	+0/001	.750	+.0002/0004	1.56	Cylindrical	Cooload	Chart	
BCCYR 2 1/2 S	63.50	+0/03	38.10	+0/03	19.05	+.0005/0010	39.7	30 762	See Load-3	Speed Chart	
BCYR 2 3/4 S	2.750	+0/001	1.500	+0/001	.750	+.0002/0004	1.56	Cylindrical	Cooload	Speed Chart	
BCCYR 2 3/4 S	69.85	+0/03	38.10	+0/03	19.05	+.0005/0010	39.7	30 762	See Load-3	speed Chart	
BCYR 3 S	3.000	+0/001	1.750	+0/001	1.000	+.0001/0005	1.81	Cylindrical	Soo Lood 6	Speed Chart	
BCCYR 3 S	76.20	+0/03	44.45	+0/03	25.40	+.0003/0013	46.0	30 762	See Load-S	speed Chart	
BCYR 3 1/4 S	3.250	+0/001	1.750	+0/001	1.000	+.0001/0005	1.81	Cylindrical	Soo Lood 6	Speed Chart	
BCCYR 3 1/4 S	82.55	+0/03	44.45	+0/03	25.40	+.0003/0013	46.0	30 762	See Load-3	Speed Chart	
BCYR 3 1/2 S	3.500	+0/001	2.000	+0/001	1.125	+.0001/0005	2.06	Cylindrical	Socional	Speed Chart	
BCCYR 3 1/2 S	88.90	+0/03	50.80	+0/03	28.58	+.0003/0013	52.4	30 762	See Load-3	opeeu Chait	
BCYR 4 S	4.000	+0/001	2.250	+0/001	1.250	+.0001/0005	2.06	Cylindrical	Sooland	Speed Chart	
BCCYR 4 S	101.60	+0/03	57.15	+0/03	31.75	+.0003/0013	2.06 52.4	30 762	See Load-S	Speed Chart	

Metric dimensions for reference only

Not all parts are available from stock. Please contact customer service for availability (800) 626-2120.

For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.

Bearing Selection Page B-3



### **BCYR**

	Part No.	нс	E	Ro	PF	PFT	PF	PFT	PF	PFT		WT		
		Hole Min Boss Center Diameter		Outer Corner				Shaft Diameter			Limiting Speed	Bearing Weight		
'	With LUBRI-DISC Seals		nch	inch	Pusi in			e Fit ch		ss Fit ch				
		(Ref)	nm (Ref)	mm (Ref)		mm		m Tol	Nom	m Tol	RPM	lb kg		
В	CYR 1 7/8 S	.44	1.25	.06 1.6	.4995	±.0002	Nom .4995	±.0002	.4995	±.0002	See Load-Speed	.80		
В	CCYR 1 7/8 S	11.1	31.8	N/A	12.687	±.005	12.687	±.005	12.687	±.005	Chart	.36		
В	BCYR 2 S	.50	1.41	.09 2.4	.6245	±.0002	.6245	±.0002	.6245	±.0002	See Load-Speed	1.05		
В	CCYR 2 S	12.7	35.7	N/A	15.862	±.005	15.862	±.005	15.862	±.005	Chart	.48		
В	BCYR 2 1/4 S .50 12.7		1.41	.09 2.4	.6245	±.0002	.6245	±.0002	.6245	±.0002	See Load-Speed	1.32		
В		12.7	35.7	N/A	15.862	±.005	15.862	±.005	15.862	±.005	Chart	.59		
В		.56 14.3	1.69	.09 2.4	.7495	±.0002	.7495	±.0002	.7495	±.0002	See Load-Speed	1.80		
В	CCYR 2 1/2 S		14.3	42.9	N/A	19.037	±.005	19.037	±.005	19.037	±.005	Chart	.82	
В	CYR 2 3/4 S	.56	1.69	.09 2.4	.7495	±.0002	.7495	±.0002	.7495	±.0002	See Load-Speed	2.25		
В	CCYR 2 3/4 S	14.3	14.3	14.3	42.9	N/A	19.037	±.005	19.037	±.005	19.037	±.005	Chart	1.02
В	CYR 3 S	.63	2.13	.13 3.2	.9994	±.0002	.9994	±.0002	.9994	±.0002	See Load-Speed	3.10		
В	CCYR 3 S	15.9	54.0	N/A	25.385	±.005	25.385	±.005	25.385	±.005	Chart	1.41		
В	CYR 3 1/4 S	.63	2.13	.13 3.2	.9994	±.0002	.9994	±.0002	.9994	±.0002	See Load-Speed	3.62		
В	CCYR 3 1/4 S	15.9	54.0	N/A	25.385	±.005	25.385	±.005	25.385	±.005	Chart	1.64		
В	CYR 3 1/2 S	.69_	2.44	.13 3.2	1.1244	±.0002	1.1244	±.0002	1.1244	±.0002	See Load-Speed	4.95		
В	CCYR 3 1/2 S	.69 2.44 17.5 61.9	N/A	28.560	±.005	28.560	±.005	28.560	±.005	Chart	2.25			
В		.75	2.80	.13 3.2	1.2494	±.0002	1.2494	±.0002	1.2494	±.0002	See Load-Speed	7.05		
В	CCYR 4 S	19.1	71.0	N/A	31.735	±.005	31.735	±.005	31.735	±.005	Chart	3.19		